

Tramadol Abuse: A Forensic and Criminal Perspective

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ABSTRACT

Background: This study explores the phenomenon of tramadol misuse from both forensic and legal perspectives. It aims to assess the knowledge and awareness of different demographic groups regarding to identification of underlying factors and motives such as pain relief, addiction, or psychological stress, and analyze the sources and methods of obtaining and consuming tramadol. **Methods:** This study adopts a descriptive analytical approach, combining quantitative data collected through targeted questionnaires with qualitative data obtained from a real-life case study. A purposive sample of 370 participants from healthcare, security, academic, and community sectors was selected. Data were analyzed using SPSS, employing descriptive statistics to identify patterns of tramadol misuse and levels of legal and social awareness. **Results:** Society Segment: All participants 86.67% reported knowing that tramadol is classified as a controlled narcotic substance under the law. **Medical Staff Professionals:** 66.7% of participants believe there is a clear connection between tramadol abuse and increased crime rates. **Academics:** 80% of participants agreed on the need for further research on tramadol misuse due to a shortage of specialized studies. **Security Sector:** 70% classify tramadol misuse as a serious crime, 24% as a moderate crime, and only 6% as a minor offense. **Conclusion:** Tramadol abuse is an escalating issue that poses significant health, social, and legal concerns. The study revealed widespread non-medical use and a lack of awareness of its risks. The findings emphasize the importance of intensifying community awareness campaigns and involving both health and educational institutions in preventative efforts.

Keywords: Tramadol, Abuse, Benghazi.

INTRODUCTION

Drug abuse represents a growing threat to global public health, affecting individuals and communities across all social, economic, and cultural boundaries.

It is considered one of the leading challenges facing modern societies due to its damaging effects on individual health and behaviour, as well as its broader consequences on social stability, economic productivity, and public safety [1].

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This study addresses drug abuse as a pathological social phenomenon driven by multiple interrelated factors — some linked to the individual, others to the family environment, and still others to the broader social structure. From a social perspective, individuals who abuse drugs often become sources of anxiety and instability, posing risks to both themselves and those around them. Continued substance use may lead to severe psychological and behavioural issues, including aggression, criminal activity, or social withdrawal [2], ultimately undermining their ability to contribute positively to society.

The spread of drug abuse can be attributed to a variety of complex causes. Psychological disorders such as depression, post-traumatic stress disorder (PTSD), and anxiety, when left untreated, may push individuals toward drug use as a form of escape or self-medication [3].

The family environment also plays a crucial role: factors such as family disintegration, lack of supervision, and chronic domestic conflict increase the vulnerability of youth to deviant behavior [4].

Additionally, peer pressure remains a significant factor, particularly during adolescence, when individuals are more impressionable.

Among the substances most commonly misused in recent years is tramadol. Originally developed as a pain reliever, tramadol has increasingly been used for its psychoactive effects, particularly among young people. Often due to a lack of awareness regarding its serious health risks and legal consequences [5].

Tramadol is a synthetic opioid medication widely prescribed to manage moderate to moderately severe pain, including post-surgical pain and chronic conditions where other pain relievers are ineffective or poorly tolerated. It functions by acting on the central nervous system to reduce the perception of pain. Its subjective effects are largely consistent with those of traditional opioids and include sedation, pain relief, anxiety suppression, muscle relaxation, and euphoria [6].

Additionally, tramadol is known to produce mild to moderate entactogenic effects such as increased music appreciation and enhanced empathy, affection, and sociability, likely due to its serotonergic activity [7].

It was first synthesised in 1962 by chemists at the German pharmaceutical company Grünenthal. However, it was not approved for medical use in Germany until 1977, when it was introduced under the brand name Tramal [8].

Over the past several decades, tramadol has become a leading analgesic drug and is now approved in over 100 countries worldwide, including the United Kingdom, the United States, China, and Canada [9].

From a chemical perspective, tramadol's chemical name is (\pm) -cis-2-(Dimethylaminomethyl)-1-(3-methoxyphenyl) cyclohexanol, with the molecular formula $C_{16}H_{25}NO_2$ and a molecular weight of 263.38 g/mol [10].

Tramadol acts on the central nervous system by binding to opioid receptors, thereby inhibiting pain signal transmission and altering the body's perception of pain. Additionally, tramadol inhibits the reuptake of norepinephrine and serotonin, which contributes to its analgesic effects through multiple mechanisms [11].

The drug is rapidly absorbed from the gastrointestinal tract and metabolised in the liver into active metabolites that further enhance its pain-relieving properties [10].

Unlike other opioids, tramadol has been shown to lower the seizure threshold in humans and increase the risk of serotonin syndrome, making its effects and interactions somewhat unpredictable. Therefore, high doses or combinations with other psychoactive substances are strongly discouraged. Harm reduction practices are highly recommended for individuals using tramadol to minimise associated risks [12].

Like all opioids, tramadol is associated with a range of side effects and risks that may become severe or even life-threatening in certain situations. Among the most critical adverse effects is respiratory depression, particularly in older adults, individuals with preexisting lung conditions, or those who have recently started the medication or experienced a dosage increase. Common side effects include constipation, dizziness, fatigue, nausea, vomiting, and muscle weakness. In some cases, tramadol can cause excessive drowsiness, which increases the risk of accidents when operating machinery or driving. These risks are amplified when tramadol is taken alongside alcohol or other central nervous system depressants [13].

Furthermore, tramadol use may not be appropriate for individuals with impaired liver or kidney function, and its safety requires careful medical evaluation. These factors highlight the importance of responsible prescribing and the dangers of misuse, especially when tramadol is consumed without medical guidance, raising serious forensic and public health concerns [14].

Study Objectives

This study aims to understand the phenomenon of tramadol abuse from a criminal and legal perspective by surveying the opinions and experiences of four main societal groups: medical professionals, members of the general public, security agencies, and academics.

The detailed objectives of the study are as follows:

1. Determine the prevalence of tramadol abuse by analysing data from various groups to assess the scale of this phenomenon in Libyan society.
2. Identify the causes and motivations for tramadol abuse, such as unemployment, psychological stress, poor health awareness, or easy access to the drug.
3. Monitor the health, social, and legal impacts of tramadol abuse by reviewing cases handled by security agencies and medical professionals.
4. Assess the level of community awareness of the dangers of tramadol as a narcotic substance.
5. Survey medical staff regarding the responsibilities in prescribing and monitoring tramadol.
6. Explore the perspectives of security agencies on combating drug abuse, as well as the effectiveness of current laws and penalties.
7. Analyse academics' views on legal and legislative aspects related to tramadol abuse and explore recommendations for improvement.

Significance of the study

The importance of this study lies in its contribution to illuminating the prevalence of tramadol abuse in Libyan society, along with its legal and health implications.

Additionally, it offers recommendations based on field findings that can inform decision makers in the security, health, and legal fields.

METHODOLOGY

Design of the study

This study employs a descriptive analytical approach to examine the phenomenon of tramadol abuse and misuse from a criminal and legal perspective within Libyan society.

The methodology integrates quantitative data collected via targeted questionnaires with qualitative data derived from a real-life case study.

Population and Sample

The sample comprised 370 participants, divided into four main categories representing diverse societal segments:

- Healthcare workers: Including doctors, pharmacists, nurses, psychologists, and sociologists.
- Security personnel: Comprising police officers, forensic experts, lawyers, and judges.
- Academics: Specialists in criminal law, Sharia sciences, medicine/pharmacy, psychology, and sociology.
- Community members: individuals from the general public.

Participants were selected using a purposive sampling to ensure diverse representation relevant to the study objective.

Data Collection Tools

A structured questionnaire served as the primary data collection instrument. It was distributed both manually and electronically across the four participant categories to assess knowledge, attitudes, and experiences related to tramadol abuse from health, social, and legal perspectives. The questionnaire included closed questions and addressed the following topics:

- Awareness of the risks associated with tramadol abuse.
- Prevalence of tramadol use in the community.
- Common reasons for people misusing.
- Health, social, and legal consequences of tramadol abuse.
- Role of pharmacies in tramadol distribution.
- Relationship between tramadol use and criminal activities.
- Necessary measures to combat tramadol abuse.
- Effectiveness of current legislation and participants' opinion.

In addition, a real-life case study examining tramadol abuse in a psychiatric hospital within the Libyan community was conducted to provide deeper qualitative insights.

This mixed-methods approach aims to offer a comprehensive understanding of the phenomenon, its triggers, and the responses of relevant authorities, supporting robust analysis and findings.

Data Analysis

Data were collected using both paper-based questionnaires distributed across various locations and electronic questionnaires distributed through social media platforms. After collection, the data were manually entered and analysed

using SPSS software. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were employed to summarise the participant demographics and explore patterns relating to tramadol misuse and legal/religious awareness in the community. This analysis provides a clear overview of tramadol misuse from both criminal and legal perspectives, without delving into hypothesis testing.

Ethical Considerations

The study adhered to ethical standards. Participation was voluntary, with confidentiality assured. Participants were informed about the study’s purpose and provided their informed consent prior to participation.

CORE THEORIES AND CONCEPTS

Society Segment Analysis

1-Personal Information

Table 1. Educational Qualification

Educational Qualification		
	Frequency	Percent
Primary/Intermediate education	7	4.7
Secondary education	16	10.7
University degree or higher	127	84.7
Total	150	100.0

The majority of participants (84.7%) held a university degree or higher, while only 10.7% had secondary education and 4.7% had primary or intermediate education. This high level of educational attainment suggests that the sample

is relatively well-informed, which may have influenced their responses regarding tramadol misuse, perceived responsibilities, and the role of awareness campaigns.

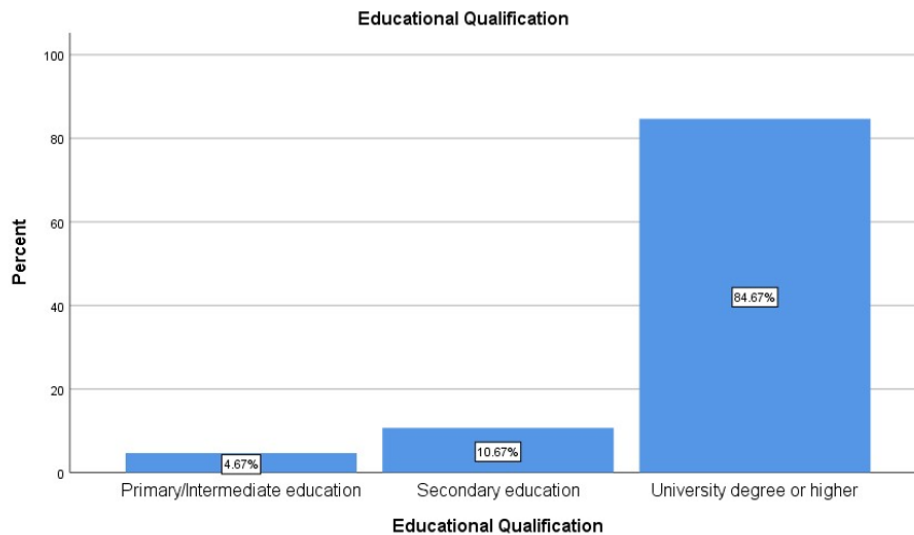


Figure 1. Educational qualification.

2-General Knowledge about Tramadol

Table 2. Do you know that Tramadol is medically used as a painkiller?

Do you know that Tramadol is medically used as a painkiller?		
	Frequency	Percent
Yes	145	96.7
No	5	3.3
Total	150	100.0

A large majority of respondents (96.7%) are aware that tramadol is used medically as a painkiller, while only 3.3% are not. This suggests a strong general knowledge among participants about the basic medical purpose of tramadol.

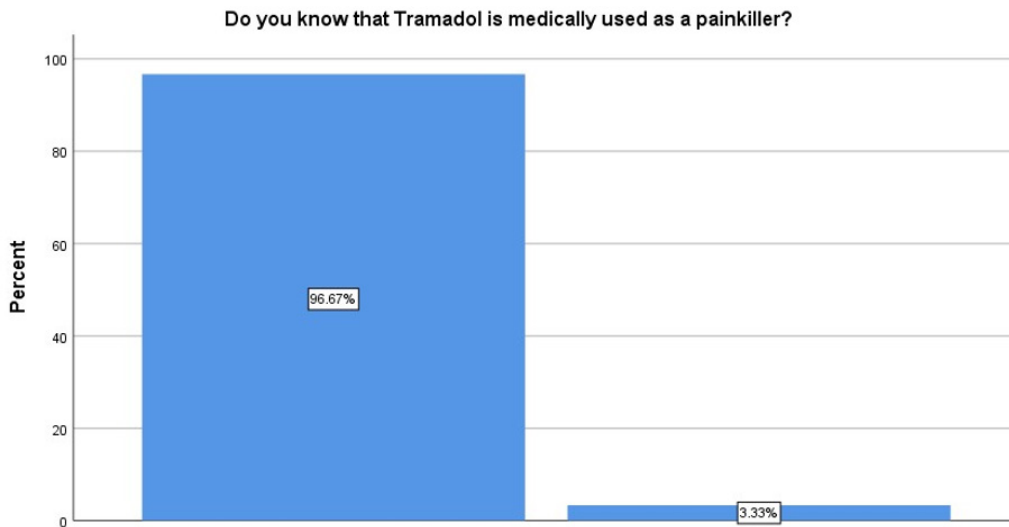


Figure 2. Do you know that Tramadol is medically used as a painkiller?

Table 3. Do you believe that Tramadol can cause addiction?

Do you believe that Tramadol can cause addiction?		
	Frequency	Percent
Yes	145	96.7
No	5	3.3
Total	150	100.0

An overwhelming majority of participants (96.7%) believe that tramadol can lead to addiction, while only 3.3% do not share this belief. This indicates a high level of awareness among respondents regarding the addictive nature of tramadol, which is essential for understanding the risks associated with its misuse.

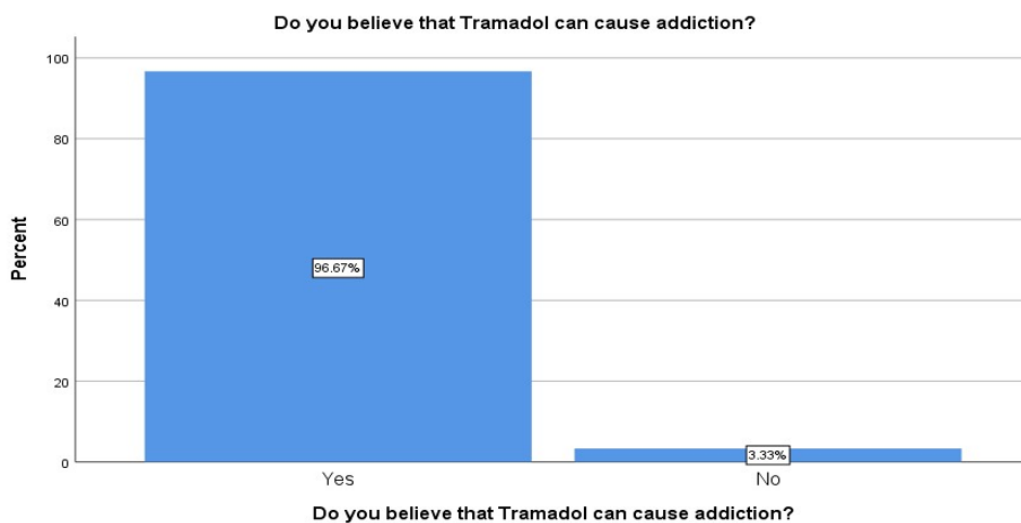


Figure 3. Do you believe that Tramadol can cause addiction?

Table 4. Do you know that Tramadol is a controlled narcotic substance under the law?

Do you know that Tramadol is a controlled narcotic substance under the law?		
	Frequency	Percent
Yes	130	86.7
No	20	13.3
Total	150	100.0

The majority of respondents (86.7%) were aware that tramadol is classified as a controlled narcotic substance under the law, while 13.3% were not. Although awareness

is relatively high, the presence of a knowledge gap among a notable minority indicates the need for broader legal education regarding the status and regulation of tramadol.

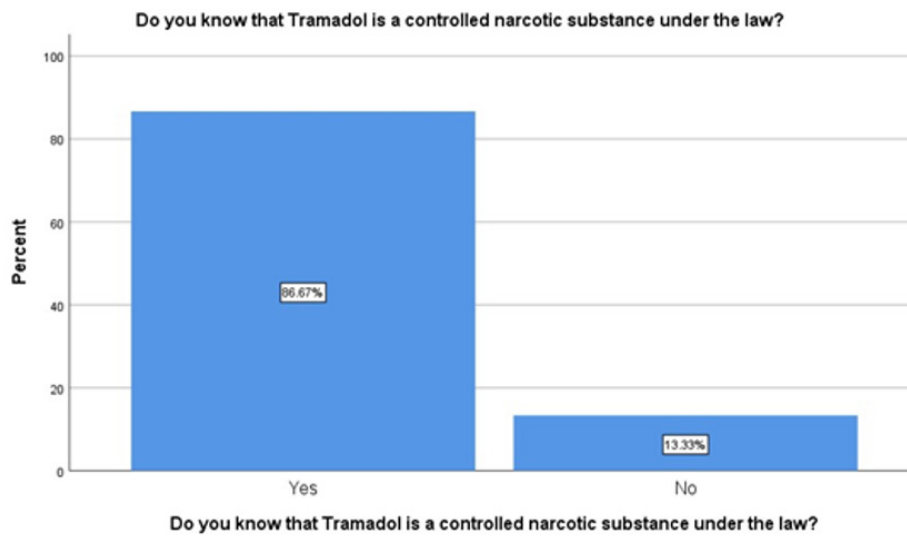


Figure 4. Do you know that Tramadol is a controlled narcotic substance under the law?

3-Knowledge and Social Effects

Table 5. Which age group do you think is most likely to misuse Tramadol?

Which age group do you think is most likely to misuse Tramadol?		
	Frequency	Percent
Teenagers (under 18 years old)	13	8.7
Youth (18-30 years old)	124	82.7
Middle-aged adults (30-50 years old)	13	8.7
Total	150	100.0

The majority of respondents (82.7%) believe that youth aged 18-30 are the most likely to misuse tramadol, while only 8.7% selected teenagers under 18 and another 8.7% identified middle-aged adults (30-50). This suggests a strong

perception that tramadol misuse is most prevalent among young adults, highlighting the need for targeted prevention efforts within this age group.



Figure 5. Which age group do you think is most likely to misuse Tramadol?

Table 6. What do you think is the impact of Tramadol misuse on society?

What do you think is the impact of Tramadol misuse on society?		
	Frequency	Percent
Increased crime rates	99	66.0
Spread of unemployment	6	4.0
Family problems	28	18.7
Deterioration of public health	17	11.3
Total	150	100.0

Most participants (66%) identified increased crime rates as the primary societal impact of tramadol misuse. Family problems were also noted by 18.7%, while deterioration of public health (11.3%) and spread of unemployment (4%)

were considered less significant. These responses suggest that the community perceives tramadol misuse mainly as a factor contributing to social instability and criminal behavior.

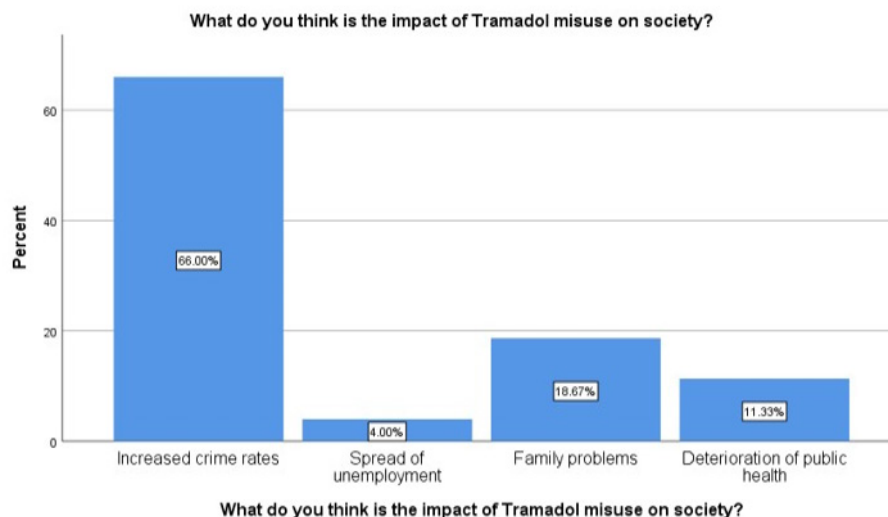


Figure 6. What do you think is the impact of Tramadol misuse on society?

DISCUSSIONS

The opinions of the community sample provided valuable insight into public attitudes and levels of awareness regarding tramadol abuse, particularly in its health, legal, and behavioural dimensions. It is observed that the majority of respondents (84.7%) held a university degree or higher. Which likely contributed to the general awareness reflected in the findings. For example, (96.7%) correctly identified tramadol as a medically approved painkiller, and the same percentage recognised its addictive potential. These results are consistent with those from Al-Araby Al-Jadeed [15], which highlighted growing public concern about youth exposure to tramadol and other prescription drugs.

Despite this, legal awareness gaps persist. While (86.7%) of the participants acknowledged that tramadol is a legally controlled substance, (13.3%) were unaware of this, underscoring the need to strengthen public education on drug laws. Similar findings were reported by Mayo Clinic [16], who linked low awareness of tramadol's legal status with harmful behaviours, particularly among young populations.

A dominant perception among participants (82.7%) was that tramadol misuse is most prevalent among individuals aged between 18–30. This aligns with regional studies such as Boone SS, et al. [17], which documented high rates of use among students and young adults across African contexts. Furthermore, (66%) of the participants associated tramadol abuse with increased crime, while others highlighted its impact on family disintegration and public health deterioration. These concerns are supported by Mohamed et al. [4], who established a link between tramadol use and aggressive or violent behaviour.

Regarding motives, the most frequently cited reason for tramadol misuse was self-treatment of pain without medical supervision (50.7%), followed by the pursuit of euphoric effects (21.3%). These findings are consistent with results from Danso and Anto [18], whose study emphasised stress, accessibility, and self-medication as key drivers, particularly among the working-class populations.

In terms of policy responses, (77.3%) of participants called for stricter controls on trafficking as a means to curb tramadol dissemination. This is consistent with recommendations by the United Nations Office on Drugs and Crime which stressed the need to combat illicit trafficking as a central challenge in Libya. Additionally, (66.8%) supported tighter regulation of drug sales, indicating strong public backing for more robust oversight.

Importantly, (91.3%) of respondents believed that tramadol use is strongly linked to criminal activity, especially domestic violence (61.3%), theft (24%), and, to a lesser extent, homicide (13.3%). These perceptions are corroborated by recent findings from the Psychiatric Clinic [1], which highlighted the behavioural risks associated with tramadol alongside its health implications.

Finally, while oral ingestion was identified as the most common method of use (68.7%), a concerning proportion of participants reported riskier practices, such as injecting or mixing tramadol with other substances. These behaviours point to the urgent need for targeted harm reduction strategies within the community.

Based on the above, the perspectives of the community sample underscore the importance of addressing the phenomenon of tramadol abuse through a comprehensive approach that integrates education, legislation, and social intervention. This approach not only reinforces the findings of previous studies but also offers context-specific evidence that can inform the development of future prevention strategies.

The most prominent findings obtained through the medical professionals' questionnaire are presented and discussed in relation to the criminal and legal context, as well as previous studies. The focus is placed on the aspects most relevant to the study's objective.

The results show that over (70%) of healthcare professionals have dealt with cases related to tramadol abuse, aligning with field reports from Libya that indicate the widespread nature of the phenomenon even within educational and healthcare institutions [15]. This highlights a critical issue within the medical and societal environment, calling for a reassessment of monitoring systems and awareness strategies.

A significant majority of participants (74.2%) reported that young individuals aged 18–30 years old are the most vulnerable group to tramadol abuse. This aligns with the findings of Saidou Sabi et al., which found that tramadol abuse among young people and students in Africa ranged from 7(4.2%) to (83.3%), reflecting a recurring regional pattern associated with age, physical activity, and psychological stress.

As for the motives for abuse, professionals indicated that the most prominent reason was the use of tramadol as a chronic painkiller without a prescription (43.3%), followed by the search for psychological effects such as euphoria (35.8%). This is consistent with the findings of Danso & Anto

[18], which showed tramadol is used to enhance physical endurance and achieve euphoria, particularly among working-age and youth groups.

Most healthcare professionals identified oral tablets as the most common form of tramadol use (65.0%), while others reported more hazardous methods such as injection (11.7%) and mixing tramadol with other substances (14.2%). These behaviours reflect unsafe consumption patterns that increase the complexity of treatment and the risk of toxicity. These findings are consistent with the Psychological Clinic Report [19], and underscore the importance of training medical personnel to effectively manage such cases.

Regarding criminal consequences, (66.7%) of participants reported a clear relationship between tramadol abuse and increased crime rates, particularly violent crimes and theft, which is consistent with reports documenting increased violence associated with the use of this drug in Libya and other African countries [4].

Prescription forgery and smuggling were also highlighted as key means of access to the drug, both activities carrying significant criminal and legal implications.

One of the most notable findings is that more than half of the participants believe the great challenge in addressing tramadol abuse cases is the lack of patient cooperation. This corresponds with reports from Clinic Psychiatry highlighting deficiencies in Libya's treatment infrastructure, including staff shortages and the absence of comprehensive long-term rehabilitation programmes.

Also, (68.3%) of participants emphasized the need for specialized training to deal with tramadol misuse in hospitals and pharmacies; this supports existing recommendations that urge capacity building among healthcare providers for early detection and effective intervention.

From a legal perspective, the ambiguous classification of tramadol as both a "legitimate drug" and a potential "intoxicant" complicates its legal treatment, particularly in Shariabased courts, where intent and context are taken into account. Previous studies have called for a balanced criminal justice approach, distinguishing between users and dealers, and promoting treatment over punishment when appropriate.

The results showed that 55.8% of participants believed that security agencies bear the greatest responsibility for combating tramadol abuse, followed by 34.2% who identified the Ministry of Health, and only 10.0% who pointed to doctors and pharmacists. This suggests that healthcare

professionals view law enforcement as the primary actor in addressing the issue, while also recognizing the importance of coordination with health institutions, as highlighted in the United Nations Office on Drugs and Crime report.

Based on the above, the findings of this study underscore the seriousness of the phenomenon of tramadol abuse in Libya. Addressing this issue requires a comprehensive, multi-sectoral approach involving healthcare, legal reform, public awareness, and institutional support through enhanced staffing, training, and updated legislation.

The academic category revealed several analytical insights that contribute to understanding the phenomenon from different cognitive and legislative perspectives, grounded in participants' backgrounds and academic specializations.

The results showed that the majority of participants (58%) specialized in medicine or pharmacy, followed by psychology and sociology (28%). This reflects a multidisciplinary representation with a clear leaning toward health and behavioural sciences, which enriches their perspectives on the phenomenon of tramadol abuse. More than half of the respondents (56%) also reported prior research experience in drug-related fields, enhancing the credibility of their responses and interpretations.

Regarding their level of knowledge, (48%) of participants indicated substantial awareness of the medical and legal uses of tramadol, whereas (32%) expressed a need for further information. These findings reflect a generally strong knowledge base while also pointing to ongoing knowledge gaps a conclusion supported by studies which highlighted the limited integration of drug awareness programmes in educational curricula.

More than half of the academics (56%) considered awareness campaigns in schools and universities to be the most effective method for addressing tramadol abuse. Lower proportions favoured media outreach or legal sanctions. This is consistent with the findings of the Psychiatric Clinic Report which emphasized the importance of early preventive intervention within educational settings as a frontline strategy against substance abuse.

Regarding motives, (40%) of academics reported that tramadol is used to escape psychological and social stress, while (38%) reported that it is used as a chronic pain reliever. These findings are consistent with those reported by Danso & Anto [18] who highlighted psychological and occupational factors as major contributors to non-medical use. These insights underscore the importance of integrating mental health services into national drug prevention strategies.

(72%) of participants believed that young people (aged 18–30) were most vulnerable to tramadol abuse, a result consistent with the findings of the medical team in the same study and consistent with regional data on the demographic most vulnerable to behavioural and health risks associated with drugs.

From a criminal perspective, (46%) of academics reported a significant relationship between tramadol abuse and increased crime rates, particularly theft and fraud (30%), followed by violent crimes such as murder and assault (26%). This view is consistent with reports by Mohammed et al. [4] and UNDOC (2018), which documented the link between tramadol abuse and involvement in criminal behavior, including smuggling and prescription forgery.

Participants also highlighted systemic challenges in drug control, with (44%) citing weak regulation over drug dispensing and (36%) pointing to the prevalence of black-market distribution. These findings are consistent with the findings of the Psychiatric Clinic Report [19], which pointed to Libya's fragile legal and institutional frameworks in the area of drug control.

Regarding the role of academics, (56%) reported that they play an important role in reducing the phenomenon through scientific research, while (30%) believed their contribution lies in providing advice to government agencies. This demonstrates an awareness of the role of the academic potential influence on public health and policy reform.

Finally, an overwhelming (80%) of participants emphasized the urgent need for further research on tramadol misuse, particularly studies that address the experiences of vulnerable populations such as women and youth, thus confirming the research gaps highlighted in the literature review.

The results of a security analysis indicate that tramadol abuse has emerged as a significant threat in Libya, particularly among adolescents and young adults. A significant proportion of respondents (80%) reported that individuals under the age of 30 are the group most involved in tramadol abuse. These findings are consistent with recent reports [15], which indicate that drug abuse is no longer confined to marginalized populations but has extended into educational institutions.

Tramadol's widespread use is largely attributed to its availability, low cost, and the lack of effective security controls at border crossings. According to security data, (74%) of cases involve oral tablet use, reflecting the ease

with which individuals access the drug in pharmaceutical form. This finding aligns with the results of a study by Boun et al. [17], who reported that poor regulatory oversight and accessibility were key contributors to tramadol misuse across several African countries.

From a security perspective, (72%) of participants viewed tramadol use as a serious criminal matter, while (88%) linked it to rising crime rates, particularly theft, which was cited by (84%) of respondents. These findings support the established correlation between substance dependence and criminal behaviour, particularly in cases involving severe psychological or physical addiction. The case of "Ahmed," documented by Mustafa (2025), exemplifies this connection, showing how his addiction led to violent conduct and involvement in drug trafficking.

Procedurally, the most common response to tramadol-related offenses was drug seizure and laboratory testing (50%), followed by preliminary investigation and referrals to court. This reflects a legal process that relies on laboratory evidence as a prerequisite for prosecution. However, (72%) of participants indicated that no distinction is made between offenders based on age or social background. This finding contradicts the nature of the cases discussed in the literature reviews, which highlight the need for age and gender in understanding addiction and its underlying causes [19].

While (94%) of respondents acknowledged the existence of inter-agency coordination in combating tramadol smuggling, Security responses within educational institutions remain largely absent. No participants reported any structured preventive initiatives in schools.

The lack of early intervention is particularly concerning in light of Ahmed's case, where his school failed to provide psychological support or guidance, contributing to the progression of his addiction.

From legal and religious perspectives, the status of tramadol in Libya exists in a grey area, especially considering the conflicting classifications of it as both a permissible treatment and a prohibited drug. Research indicates that in Sharia courts, the use of tramadol without medical necessity is prohibited, and users may face disciplinary punishment (ta'zir).

International and local reviews concur that addressing tramadol use should not be confined to security considerations alone; it must also encompass comprehensive preventive and therapeutic dimensions. The high frequency of relapse after treatment in Libya, as reported by the Psychiatric Clinic

[19], underscores the fragility of the country's addiction treatment infrastructure.

Statistical results indicate that (58.9%) of participants identified young people and adolescents as the population groups most vulnerable to tramadol abuse, while (17.8%) pointed to individuals dependent on medication for treatment. These findings are consistent with previous research [15], which revealed that (3%) of Libyan students aged between 12-17 misuse prescription medications, particularly tramadol. Supporting this, Boon et al. [17] reported misuse rates of (74.2%) among university students and (83.3%) among secondary school students across several African countries.

A considerable proportion of participants perceived the prevalence of tramadol abuse to be high, with (37%) describing it as "high" and 20.5% as "very high." Meanwhile, (39.2%) considered it "moderate," and only (3.2%) described it as "low." These perceptions are consistent with the findings of the United Nations Office on Drugs and Crime (2023) [1] report, which documented the seizure of 12 million tramadol tablets in a single operation in Libya, reflecting the magnitude of the illicit market.

Among respondents, (73.2%) emphasized the lack of public awareness regarding tramadol misuse, while only (14.1%) considered awareness levels to be adequate. Additionally, (69.7%) associated tramadol with addiction and (15.1%) linked it to mental health disorders. These perceptions are supported by findings from within Saidou Sabi et al which highlighted dependency syndrome in (49%) of cases studied in Ghana, along with severe withdrawal symptoms such as anxiety, insomnia, and muscle pain. Moreover, specific neurological effects were reported in (12.4%) of participants.

Participants attributed tramadol misuse to various factors: (30.3%) cited its potent analgesic effect, (25.9%) to its accessibility, and (23.2%) to psychological stress. These observations are consistent with the findings of Danso and Antwo [18], who reported similar patterns among Ghanaian truck drivers (24.9%) using tramadol due to prolonged working hours and higher addiction risk (33%) among individuals from unstable family backgrounds.

Almost half of the participants (46.5%) pointed to deficiencies in existing legislation, while (29.7%) held pharmacies responsible for enabling access to tramadol: furthermore, (66.8%) called for stricter control measures. These concerns are consistent with [21] report, which described systemic

limitations in Libya's treatment infrastructure—limited to only three centres (Benghazi, Tripoli, and Sabha)—along with severe shortages of staff, beds, and coordination between the ministries of health and education.

A large majority (84.1%) believed there is a direct link between tramadol misuse and criminal behaviour. In Sharia courts, rulings depend on intent—permitting medical use but prohibiting use for intoxication. The World Health Organisation [2], classified tramadol as a substance with moderate potential for addiction. However, challenges arise in traditional criminal courts due to differences in penalties across jurisdictions and difficulties in proving intentional misconduct while under the influence.

Efforts to reduce pharmaceutical drug misuse require enhanced institutional coordination, as noted by (61.4%) of respondents who emphasised the importance of multisectoral collaboration. Moreover, (55.1%) highlighted the inadequacy of current media awareness campaigns [20-23].

CONCLUSION

1. Tramadol abuse is an escalating issue that poses significant health, social, and legal concerns. This research, through the analysis of questionnaires from a substantial number of participants, revealed a notable prevalence of tramadol use outside of medical supervision, often for purposes such as sedation or to enhance physical and psychological performance. These findings reflect a general lack of awareness regarding the drug's risks and adverse effects.
2. From a criminal and legal standpoint, the study has highlighted gaps in existing legislation and enforcement in curbing the illicit circulation of tramadol. This underscores the need to strengthen legal oversight, revise drug classification policies, and enhance the effectiveness of law enforcement agencies in addressing cases of misuse and illegal distribution.
3. Furthermore, this project emphasises the importance of intensifying community awareness campaigns and involving both health and educational institutions in preventative efforts. Awareness programmes should focus on educating the public about the dangers of using such medications without proper medical guidance. It is hoped that the findings of this study will support policymakers and relevant stakeholders in developing more effective strategies to mitigate and prevent tramadol abuse.

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None.

CONFLICT OF INTEREST

No conflict of interest is associated with this work.

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